

REMARKS

Applicants thank the Examiner for his thorough search of the art and Office Action. Applicants, by this Amendment, have amended the claims to overcome deficiencies noted in the Examiner's Official Action. After entry of this Amendment Claims 1 – 19 remain pending in the Application.

In the Office Action the Examiner rejected Claims 1, 8 and 15 under 35 U.S.C. 102(e) as being anticipated by Roesner (U.S. Patent 6,147,655; hereinafter referred to as "Roesner"). The Examiner described Claims 1, 8 and 15 (present application) and FIG. 1 (Roesner) as disclosing an antenna (10), a feed structure (26 & 28) and a discontinuity extending towards and away from the feed and being close enough to the feed to couple the feed as recited.

Applicants respectfully traverse the Examiner's rejection of Claims 1, 8 and 15 under 35 U.S.C. 102(e) as being anticipated by Roesner. Roesner discloses a wire loop disposed on one side of a substrate in a serpentine pattern so that the length of the loop is substantially increased relative to a net area enclosed within the loop [Roesner; Col. 2, line 63 – Col. 3, line 2]. Roesner simply discloses a loop antenna element (that is, a linear antenna element) arranged on a planar substrate. Roesner does not disclose a substantially planar antenna element. Moreover, Roesner does not disclose a discontinuity structure that is connected with the feed structure of the antenna element, as is presently claimed.

The discontinuity structure of Roesner cited by the Examiner is merely a path deviation of the loop path of Roesner's linear antenna element on a supporting substrate. Roesner consistently describes his structure as being [Roesner; Col. 3, line 6, "continuous loop pattern"; Col. 3, line 13, "continuous serpentine loop pattern"; Col. 3, line 26,

“continuous conductive path”]. Roesner refers to his invention as an “antenna pattern for use on a single surface of an insulated substrate” (Roesner; Col. 3, line 31 – 32].

Nowhere does Roesner refer to or suggest or disclose a substantially planar antenna element employing a discontinuity structure to interfere with signals at a selected frequency so that responsiveness of the antenna element is reduced at the selected frequency [Specification; page 29, lines 1 – 23].

Roesner teaches away from the structure of the present invention. If Roesner were to connect one of his path-deviation structures (as characterized by the Examiner) to his feed structure (terminals 26, 28) the loop path would be shortened, thereby defeating the very purpose of Roesner’s invention.

Roesner does not anticipate disclose, teach, show, suggest, infer or in any way render obvious the present invention as claimed in Claims 1, 8 and 15. It is respectfully submitted that Claims 1, 8 and 15 patentably distinguish over Roesner.

The Examiner continued in the Office Action, rejecting claims 2 – 7, 9 – 14 and 16 - 19 under 35 U.S.C. 103(a) as being unpatentable over Roesner in view of Dettloff (U.S. Patent 6,570,541; hereinafter referred to as “Dettloff”).

Regarding Claims 2, 9 and 16, the Examiner stated that Roesner does not disclose a polygonal shape element. According to the Examiner, FIG. 5D of Dettloff discloses using a polygonal element with discontinuities to obtain a desired electromagnetic field pattern.

The Applicants respectfully traverse the Examiner’s rejection of Claims 2, 9 and 16 under 35 U.S.C. 103(a) as being unpatentable over Roesner in view of Dettloff. As recited by the Examiner himself, the polygonal shaped elements of Dettloff are designed to obtain a desired electromagnetic field pattern. Dettloff discloses using multiple in-phase current

loops to wirelessly project power in the mid field [Dettloff: Col. 7, lines 46 – 47]. In contrast, the present invention is designed to reduce responsiveness of an antenna apparatus at a selected frequency [Specification; page 29, lines 20 – 23]. Neither Roesner nor Dettloff is concerned with reducing responsiveness of an antenna apparatus at a selected frequency.

Neither Roesner nor Dettloff nor any combination of Roesner and Dettloff anticipates discloses, teaches, shows, suggests, infers or in any way renders obvious the present invention as claimed in Claims 2, 9 and 16. It is respectfully submitted that Claims 2, 9 and 16 patentably distinguish over Roesner and Dettloff.

Regarding Claims 3, 10 and 17, the Examiner stated that scaling the physical size of an antenna element to match a desired wavelength is a well known practice in the antenna art and doing such with the disclosed antenna would be obvious to one of ordinary skill in the art.

The Applicants respectfully traverse the Examiner's rejection of Claims 3, 10 and 17 under 35 U.S.C. 103(a) as being unpatentable over Roesner in view of Dettloff. The recitations in Claims 3, 10 and 17 are not merely a description of scaling an antenna element to match a desired wavelength. The recitations of Claims 3, 10 and 17 relate to the placement of a deviation locus in terms of a peripheral distance for establishing the selected wavelength at which the antenna apparatus will exhibit a deviation in its signal response. The recitations in Claims 3, 10 and 17 are not merely a statement of a well known practice in antenna art, but rather are a claiming of advantageous employment of an aspect of antenna art to advantage in designing the novel structure of the present invention to effect adjustment of the selected wavelength at which an antenna apparatus will exhibit a variation in its response.

Neither Roesner nor Dettloff nor any combination of Roesner and Dettloff anticipates discloses, teaches, shows, suggests, infers or in any way renders obvious the present invention as claimed in Claims 3, 10 and 17. It is respectfully submitted that Claims 3, 10 and 17 patentably distinguish over Roesner and Dettloff.

Regarding Claims 4 – 5 and 11 – 12, the Examiner stated that both references (Roesner and Dettloff) disclose multiple identical discontinuities as recited.

The Applicants respectfully traverse the Examiner's rejection of Claims 4 - 5 and 11 - 12 under 35 U.S.C. 103(a) as being unpatentable over Roesner and Dettloff. As mentioned earlier herein, Roesner simply discloses a loop antenna element (that is, a linear antenna element) arranged on a planar substrate. Roesner does not disclose a substantially planar antenna element. Moreover, Roesner does not disclose a discontinuity structure that is connected with the feed structure of the antenna element, as is presently claimed. Roesner teaches away from the structure of the present invention. If Roesner were to connect one of his path-deviation structures (as characterized by the Examiner) to his feed structure (terminals 26, 28) the loop path would be shortened, thereby defeating the very purpose of Roesner's invention.

As also mentioned earlier herein, Dettloff discloses using multiple in-phase current loops to wirelessly project power in the mid field [Dettloff: Col. 7, lines 46 – 47]. Dettloff does not disclose using one or more discontinuities in an antenna element to reduce responsiveness of an antenna apparatus at a selected frequency [Specification; page 29, lines 20 – 23]. Neither Roesner nor Dettloff is concerned with reducing responsiveness of an antenna apparatus at a selected frequency.

Neither Roesner nor Dettloff nor any combination of Roesner and Dettloff anticipates discloses, teaches, shows, suggests, infers or in any way renders obvious the present

invention as claimed in Claims 4 - 5 and 11 - 12. It is respectfully submitted that Claims 4 - 5 and 11 - 12 patentably distinguish over Roesner and Dettloff.

Regarding Claims 6 – 7, 13 – 14 and 18 – 19, the Examiner stated that FIG. 6 of Dettloff discloses an elliptical shaped antenna as recited for a desired field pattern.

The Applicants respectfully traverse the Examiner's rejection of Claims 6 – 7, 13 – 14 and 18 – 19 under 35 U.S.C. 103(a) as being unpatentable over Roesner and Dettloff. Dettloff's FIG. 6 illustrates an array of identical hexagonal-shaped in-phase current loops [Dettloff; Col. 13, lines 20 – 21]. However, Dettloff mentions that his current loops can be other polygonal shapes, including ellipses [Dettloff; Col. 13, lines 25 – 28].

Dettloff discloses using multiple in-phase current loops to wirelessly project power in the mid field [Dettloff: Col. 7, lines 46 – 47]. Dettloff does not disclose using one or more discontinuities in an antenna element to reduce responsiveness of an antenna apparatus at a selected frequency [Specification; page 29, lines 20 – 23].

Neither Roesner nor Dettloff nor any combination of Roesner and Dettloff anticipates discloses, teaches, shows, suggests, infers or in any way renders obvious the present invention as claimed in Claims 6 – 7, 13 – 14 and 18 – 19. It is respectfully submitted that Claims 6 – 7, 13 – 14 and 18 – 19 patentably distinguish over Roesner and Dettloff.

The Examiner opined that it would have been obvious to one of ordinary skill in the art at the time of the invention to use the antenna shapes disclosed in Dettloff for the antenna disclosed in Roesner to obtain desired field characteristics from the antenna as disclosed in Dettloff.

Neither Roesner nor Dettloff nor any combination of Roesner and Dettloff anticipates discloses, teaches, shows, suggests, infers or in any way renders obvious the present invention as claimed in Claims 1 – 19. It is respectfully submitted that Claims 1 – 19 patentably distinguish over Roesner and Dettloff.

Since Applicants have fully and completely responded to the Official Action, this Application is now in order for early action and such early action is respectfully requested. If the Examiner would deem a telephone conference to be of value in expediting this Application, he is invited to call the undersigned attorney at (972) 758-1955 at his convenience.

Respectfully submitted,



Donald D. Mondul

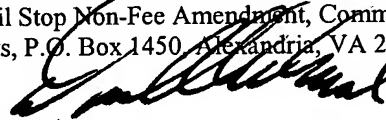
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